language, text from historical usage of one or more users, and similar non-traditional sources of symbol strings.

[0128] Ideal, Ideally, Optimum and Preferred—Use of the words, "ideal," "ideally," "optimum," "optimal," "should" and "preferred," when used in the context of describing this invention, refer specifically a best mode for one or more embodiments for one or more applications of this invention. Such best modes are non-limiting, and may not be the best mode for all embodiments, applications, or implementation technologies, as one trained in the art will appreciate.

[0129] May, Could, Option, Mode, Alternative and Feature—Use of the words, "may," "could," "option," "optional," "mode," "alternative," "typical," "ideal" and "feature," when used in the context of describing this invention, refer specifically to one or more embodiments of this invention. Described benefits refer only to those embodiments that provide that benefit. All descriptions, examples, and scenarios herein are non-limiting, as one trained in the art will appreciate.

[0130] All examples are sample embodiments. In particular, the phrase "invention" should be interpreted under all conditions to mean, "an embodiment of this invention." Examples, scenarios, drawings, applications, and claimed benefits herein are non-limiting. The only limitations of this invention are in the claims.

[0131] All combinations and sub-combinations of all features, embodiments, claims and claim limitations are explicitly included as embodiments herein. In particular, the limitations in all of the dependent claims are also claimed as dependent claims from all other independent claims.

We claim:

1. A method of creating a keyboard state table mapping a chording keyboard state k to a symbol s, for a chording keyboard comprising K keyboards states and a symbol set of S symbols, comprising the steps of:

a) constructing an array of K*(K−1) entries wherein each entry represents a keyboard state transition of the chording keyboard from a first keyboard state k1 to a second keyboard state k2;

b) constructing an exercise adapted to be performed by users of the cording keyboard wherein the users use the chording keyboard to generate a series of keyboard state transitions;

c) measuring the difficulty with which a user generates each transition, such difficulty, as a single scalar, the, "psychomotor cost" of that transition;

d) aggregating the psychomotor costs from different users of the exercise, for each transition in the array;

e) entering the aggregated psychomotor cost for each transition in the array;

f) identifying a text corpus comprising sequential symbols from the symbol set;

g) creating a first keyboard state table that associates with each of the K keyboard states one symbol from the set of S symbols; assigning the first keyboard state table a keyboard state table under test;

h) encoding the text corpus using the keyboard state table under test;

i) summing the total psychomotor costs for all of the sequential transitions to complete step h, using the array to determine the psychomotor cost for each transition used in step h); this sum being the total psychomotor cost for the keyboard state table under test using the corpus;

k) creating a set of alternative keyboard state tables by permuting a different subset of table lines from the keyboard state table under test; wherein the size of the subset is Z table lines;

l) performing steps h) and i) for each table in the set of alternative keyboard state tables; wherein each table in the set of alternative keyboard state tables now becomes one keyboard state table under test; thus creating multiple keyboard state tables under test and copies of steps of this method;

m) selecting the one table from the set of alternative keyboard state tables that has the lowest total psychomotor cost; the selected table becoming a new keyboard state table under test;

n) repeating steps k) through m) until a terminating condition is reached;

o) using a last selected table as the keyboard state table created by this method;

wherein the chording keyboard is free of a requirement to release all keys between chords.

2. The method of claim **1** wherein:

when the keyboard generates any defined first chord consisting of a first depressed subset of less than n keys and the keyboard generates immediately following any second, different, defined cord in the set of 2^n cords comprising a second depressed subset of the n keys wherein the second subset comprises the first subset; and

the transition from the first chord to the second chord is free of a requirement than any key be released.

3. The method of claim **1** wherein:

the method is free of use of separate perceptual and motor scores associated with either chords or transitions.

4. The method of claim **1** wherein:

the method is free of use of perceptual, motor, or psychomotor costs associated solely with chords.

5. The method of claim **1** wherein:

the chording keyboard is adapted to be used fully by a single hand.

6. The method of claim **1** wherein:

for each symbol s in the symbol set S, the symbol is output from the chording keyboard by entering a single chord.

7. The method of claim **1** comprising the additional step of:

(p) expanding the final keyboard state table to comprise an additional state assigned to a null symbol s-n not contained in the set S.

8. The method of claim **1** comprising the additional step of:

(q) expanding the final keyboard state table to comprise one or more additional states assigned to commands not contained in the set S.

9. The method of claim **701** wherein:

the method of claim **701** is free of perceptual, motor or psychomotor costs associated with individual chords.

10. The method of claim **1** wherein:

the keyboard consists of keys located proximal to the fingertips of user's hand when the user's hand is in a resting position.

11. The method of claim **1** wherein:

the keyboard consists of four to nine keys.

12. The method of claim **1** wherein:

when the keyboard generates any first chord in the set of 2^n consisting of a first depressed subset of keys and the